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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
097010-822	01/22/98	KNOWLTON	3756-399

020583 PM51/0315  
PENNIE AND EDMONDS  
1155 AVENUE OF THE AMERICAS  
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EXAMINER
MILLER, E

ART UNIT	PAPER NUMBER
3641	

DATE MAILED: 03/15/99

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trad marks**

# Office Action Summary

Application No.  
**09/010,822**

Applicant(s)  
**Knowlton et al.**

Examiner  
**Edward Miller**

Group Art Unit  
**3641**



☐ Responsive to communication(s) filed on \_\_\_\_\_

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-24 is/are pending in the application.

Of the above, claim(s) 2-12 and 19-24 is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1 and 13-18 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☒ Claims 1-24 are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102, which form a basis for rejections herein:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102 (b) as being fully met by Ellern.

See Page 46, lines 15-16, teaching a composition of mixed magnesium powder and finely crushed silver nitrate.

3. The following is a quotation of 35 U.S.C. 103 which forms the basis for all rejections for obviousness set forth in this action:

"A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made. Subject matter developed by another person, which qualifies as prior art only under subsection (f) and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person."

4. Claims 1 and 13-18 are rejected under 35 U.S.C. 103 as being unpatentable over Sammons et al. in view of Sidebottom, Garner '253, Healy and Ellern et al.

Sammons et al. teach a composition which includes a metal fuel, col. 5, lines 54-64, e.g., including molybdenum at about line 61. Further, the composition includes a polymer binder which is solid when cured, which includes amine groups and therefore is a solid organic amine, conveniently note claim 10. The oxidizers are taught at col. 6, lines 14-44, with silver perchlorate as a Group IB metal perchlorate at lines 31-32, and reciting nitrates of IB metals at lines 36-37. This clearly teaches or at least suggests silver nitrate. The additives that may be employed include guanidine nitrate at col. 7, line 70. In view of Sidebottom, Garner '253, and Healy, it would have been clearly obvious to use silver nitrate as the oxidizer. Ellern, pages 296-300, and particularly Table 31 on page 299 teaches regarding the melting and decomposition temperature temperatures of silver nitrate, and discusses the reaction of solid fuels with solid

oxidizers as related to the melting temperature. This would seem to suggest the relatively low decomposition or autoignition (spontaneous ignition) temperature of such compositions. Further, as to the claim 18 fuel rich requirement, this would seem to be suggested by the teaching of varying the metal, including molybdenum, fuel content from 0.2 to 32% by weight. Since the specific ingredients are taught or clearly suggested, this would seem to suggest that the functional requirements are met, or this supports the proposition that the claims are unduly broad and indefinite. It is well settled that optimizing a result effective variable is well within the expected ability of a person of ordinary skill in the subject art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980), *In re Aller*, 220 F.2d 454, 105 USPQ 233 (CCPA 1955).

5. Claims 1 and 13-16 are rejected under 35 U.S.C. 103 as being unpatentable over Halliday et al. in view of Tepper and Ellern.

Halliday et al. teach an invention which comprises aluminum metal fuel, col. 1, lines 37-40, together with an oxidizer of nitrates which have a low melting point, col. 2, lines 19-43. These may include silver nitrate, line 41. Further, guanidine nitrate and other amines are taught at col. 2, lines 60-64, e.g. In view of Tepper, col. 1, lines 43-48, substitution of a similar metal fuel, taught for use with eutectic or peritectic oxidizer salt compositions, would have been obvious. Ellern further teaches specific low melting salt mixtures in "Table 19", page 271, which include silver, e.g., at 20 Li, 61 NH<sub>4</sub>, and 36.5 Ag (at 52 degrees C.) and the next several lines. Substitution of such a low melting ammonium nitrate/silver nitrate mixture for the ammonium nitrate low melting mixture of Halliday et al., which may include silver and other nitrates, would have been obvious to one of ordinary skill in the art. See the case law *supra*.

6. Claims 1 and 13-18 are rejected under 35 U.S.C. 112, first and second paragraphs, because the claimed invention is not described in such full, clear, concise and exact terms as to enable any person skilled in the art to make and use the same, and/or for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are unduly broad and indefinite. While there is a functional limitation of a certain temperature of autoignition, there is inadequate specifics, particularly with relationship to broad claim 1, as to the ingredients and amounts employed to effect such functional result. It is deemed that the determination thereof, particularly with respect to claim 1 would require undue experimentation to determine the meets and bounds of the invention. The specification is objected to therefore, and the claims lack

adequate support in this regard.

It is noted that applicants recite that solid organic amines are oxidizers throughout the claims and specification. This is simply incorrect. Note Khandhadia, col. 2, line 65-col. 3, line 10; Poole '757, col. 4, lines 14-18 and 32-33; and Hock et al., col. 2, lines 58-66. It is perfectly clear that a fuel (organic amine, specifically tetrazole or aminotetrazole) is combusted by the oxidizer; it does not form any part of the oxidizer. Thus, applicants' specification and claims are defective in this regard. Further, a single example or alleged amine oxidizer, particularly in view of the error of such recitation, does not form an adequate basis for an entire genus of alleged amine oxidizers. It is apparent that the species that is disclosed has zero oxygen therein, and this also does not support the allegation. These are exemplary.

7. Applicant is required under 35 U.S.C. 121 to elect a single, ultimate, disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, all claims are generic. This requirement is on the basis of an unduly burdensome search, MPEP 809.02(d) and/or Markush practice, MPEP 803.02. The single ultimate species shall be one specific composition as in a single example.

Applicant is advised that a response to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 C.F.R. 1.141. If claims are added subsequently, applicant must indicate those readable on the elected species. MPEP 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if one of the inventions is found unpatentable over the prior art, the evidence or admission will also be applicable under 35 U.S.C. 103 as to the other invention.

During a telephone conversation of Examiner Miller and Mr. Force on February 25,

1999, a provisional election was made with traverse to prosecute the species of Molybdenum fuel with a mixture of silver nitrate, potassium nitrate and guanidine nitrate. Affirmation of this election must be made by applicant in responding to this Office action. Claims 2-12 and 19-24 are withdrawn from further consideration by the Examiner, 37 C.F.R. 1.142(b), as being drawn to a non-elected species.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

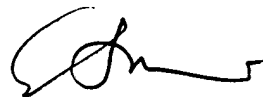
9. Any inquiry concerning either this or an earlier communication from the Examiner should be directed to Examiner Edward A. Miller at (703) 306-4163.

Examiner Miller may normally be reached daily, except alternate Fridays, from 8:30 AM to 6 PM.

If attempts to reach Examiner Miller by telephone are unsuccessful, his supervisor, Mr. Jordan, can be reached at (703) 306-4159. The Group fax number is (703) 305-7687.

If there is no answer, or for any inquiry of a general nature or relating to the application status, please call the Group receptionist at (703) 308-1113.

Miller/em  
March 8, 1999



EDWARD A. MILLER  
PRIMARY EXAMINER

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